

Remarks

Claims 1-37 were examined. The claims have been amended, with the full support of the specification, in a way which is thought by Applicants to more particularly point out and distinctly claim that which is regarded as the invention. Claim 17 has been amended to correct its dependency. New claim 38 has been added for consideration by the Examiner. Per telephone communication with Examiner Fuller, formal drawings will be provided responsive to receipt of a Notice of Allowance, in accordance with standard practices.

The Rejections under 35 U.S.C. § 103

The Examiner rejected Claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6, 294,022 issued to Eslambolchi et al. (hereinafter the '022 patent) in view of U.S. Patent No. 4,387,340 issued to Peterman. The Examiner relies on the '022 patent as teaching a hand-held apparatus for producing a spray-painted mark on the ground to identify locations that have buried cables and on Peterman for teaching a hand-held apparatus for detecting buried cables. The Examiner then states that it would have been obvious at the time the invention was made to use the apparatus of Peterman to detect the location of a buried cable prior to marking the ground. And then states that:

"By doing so, one would reap the benefits of accurately marking the ground in the required locations." (emphasis supplied)

In this regard, it appears that there is an inference by the Examiner that the proposed combination of references is reasonable based on accuracy in marking the ground. Applicants respectfully disagree, as will be further discussed immediately hereinafter.

Considering the limitations of Claim 1, a method is recited for using a portable locator to locate at least one of a buried line and a boring tool. The locator is configured to integrally support a marking arrangement in one operating position in relation to a locating arrangement that is supported at another operating position. A position on the surface of the ground is then established using the locating arrangement relative to at least one of the boring tool and the buried line. Subsequently, the location is marked using the marking arrangement. It is noted that these limitations are not related in any primary sense to improvement of ground marking accuracy. In this regard, there are a number of advantages that are provided by the claimed method, as are described by the present application, including eliminating the need for an operator to carry a separate marking device thereby freeing one hand to attend to other tasks. As another described advantage, the operator may remain standing in a substantially upright position without the need to repeatedly bend over in order to mark the ground. Relatedly, efficiency is enhanced since the operator uses the locator for locating purposes and marking purposes without the need to change body position.

While any number of other advantages may at least potentially be inferred in view of the present application, it is noted that the present application does not discuss ground marking accuracy as an advantage, nor does the present application discuss inaccuracy of ground marking as a problem that is unresolved by the prior art. Accordingly, it is respectively submitted that the proposed combination is unreasonable, even if it were supported by the references

themselves (which Applicants do not believe), since this inferred advantage bears little, if any, relationship to the present application.

Considering the '022 patent, a ground marking device is taught which uses spray paint in order to apply legible text to the ground surface. The motivation for the invention appears to be based on the limited capability of an operator to use previous ground marking arrangements to apply such legible text to the surface of the ground so as to warn of buried utilities in the vicinity of the marking. The importance of such legible marking arises based on notification requirements of state "one-call" laws which require a utility company to identify the vicinity of their buried utility, including a telephone number. One stated purpose for the marking, as described at col. 1, lns. 23-25, is to allow a digging contractor to call the recited telephone number if electronic locating is in disagreement with the location of the mark. Based on the manner in which this inaccuracy problem is resolved, it is readily apparent that the '022 patent is not addressed to enhancing the accuracy of ground marking, but rather to satisfying state law requirements which are directed to protecting in-ground investments of utility companies and exposure of those who damage those utilities to liability. Specifically, the patent is directed to a notification function, recognizes that ground markings can be inaccurate and poses no solution to curing any problem which would enhance the accuracy of such inaccurate markings. Accordingly, Applicants believe that the '022 patent teaches away from the inferred advantage of improved ground marking accuracy, in posing a completely alternative resolution with respect to inaccurate markings. For at least this reason standing on its own, it is submitted that the proposed combination of references is unreasonable under § 103.

Still considering the '022 patent, it is noted that there is no requirement to use this device in conjunction with a portable locator. The patent makes this perfectly clear at col. 2, lns. 60-63, by stating that this tool may be used for marking sports fields and construction sites. This versatility is purportedly enhanced since the marking stencil used by the device is readily interchangeable. Further, at col. 3, lns. 14-17, the '022 patent goes on to say:

[I]t is to be understood that the spray paint marking tool of the present invention can be used in any situation where it is desired to provide a marking (usually temporary) on a ground surface.

Based on the foregoing, even if the inferred basis of enhanced accuracy were to be accepted as a reasonable basis for the proposed combination of references, the '022 patent is submitted to be directed to entirely unrelated purposes. Accordingly, for at least this reason, it is submitted that the proposed combination of references is unreasonable under § 103.

Now considering the Peterman reference in terms of the inference of enhanced accuracy, as supporting the proposed combination, what is fairly taught by the reference is a portable locator used for locating an underground utility by detecting an electromagnetic locating signal that is emanated from the utility. The patent asserts certain advantages, which may relate to enhanced locating accuracy with respect to identifying the location of the utility, based on the operation of the locator with regard to complex issues such as, for example, amplifier gain adjustments and interference with the locating signal. Applicants respectfully disagree. It is submitted that this teaching has been taken, out of context,

as reasonably suggesting the combination of this reference with the remaining art of record without to regard to what the patent fairly teaches as a whole.

At this juncture, it is appropriate to note that there are any number of portable utility locating devices in the prior art and that enhanced locating accuracy should be a goal of anyone producing a portable locator. Such accuracy, when Peterman is taken as a whole, however, bears no relationship to the '022 patent, or the art of record yet to be discussed, in terms of enhanced ground marking accuracy. Further, Applicants find no disclosure, teaching or reasonable suggestion in Peterman with regard to ground marking or accuracy in doing so. Applicants remain unaware of any reference which teaches an integral ground marking device in a portable locator that is configured for identifying at least one of a boring tool and a buried utility. Accordingly, Applicants submit that Peterman is not reasonably combinable with the '022 patent based on improved ground marking accuracy and respectfully request withdrawal of the § 103 rejection of claim 1 for this reason standing on its own.

Turning now to a brief discussion of one requirement in making out a proper rejection under § 103, it is well-settled in the case law that, in terms of combining references, a combination of references is proper only if there is some objective teaching in the prior art that would lead one of ordinary skill in the art to combine the relevant teachings of the references. In re Fine, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). See also In re Rhinehart, 189 U.S.P.Q. 143, 147 (CCPA 1976). Applicants are unable to find any disclosure, teaching or suggestion in these references which would reasonably lead Applicants to modify the marking device of the '022 patent in the suggested manner. Applicants find no discussion in the '022 patent of using the disclosed device in conjunction with a portable locator and, further, find no discussion of ground marking in the Peterman reference. Accordingly, for this reason standing on its own, Applicants respectfully request allowance of claim 1 over the art of record.

With respect to the statement in the outstanding Office Action that the combination of Peterman with the '022 patent would allow one to "reap the benefits" of accurately marking the ground in the required locations. It appears that the Examiner is suggesting that the combination is reasonable simply because an improved device is provided. Applicants submit that this rationale falls short of any objective teaching in the art of record which would lead Applicants to combine these references in the proposed manner. It appears to Applicants that the Examiner is relying on Official Notice in order to make out this aspect of the claimed combination. If this is the case, Applicants respectfully traverse the rejection on these grounds and request an express showing of documentary proof, or an affidavit, as required by MPEP § 2144.03, in the event the rejection is maintained on these grounds.

Still considering the patentability of claim 1, the Examiner cites case law including Nerwin v. Erlichman, In re Wolfe, and In re Howard as providing some basis to supply both marking elements and detection elements in one apparatus. The specific rationale for reliance on this case law is unclear to Applicants. Applicants have reviewed the latter two cases and find no specific references to either ground marking or locating. It is noted that MPEP § 2144.04 states that it is generally inappropriate to rely solely on case law as a rationale in support of an obviousness rejection. Accordingly, Applicants respectfully request clarification or withdrawal of the § 103 rejection which is set forth on this basis.

Dependent Claims 2-9 are each either directly or indirectly dependent from and therefore include the limitations of Claim 1. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 1. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 1, further distinguish the claimed invention from the art of record.

For example, claim 4 recites the step of configuring the marking arrangement such that an operator of the portable locator, in a generally upright position, locates using the locating arrangement and marks the surface of the ground using the marking arrangement. Again, Applicants are unaware of any method in the prior art which reasonably discloses, teaches or suggests locating and marking using integral arrangements.

As another example, claim 5 recites that the marking arrangement is configured for finger actuation by the operator.

As still another example, claim 6 recites that the marking arrangement is configured for foot actuation by the operator.

The Examiner rejected Claims 10-37 under 35 U.S.C. § 103(a) as being unpatentable over the '022 patent in view of Peterman, as applied to claims 1-9, and further in view of U.S. patent no. 6,064,940 issued to Rodgers et al (hereinafter Rodgers). The Examiner admits, and Applicants agree, that the '022 patent in view of Peterman fails to teach marking and detection elements in one package. It is noted that this combination is considered by Applicants to clearly be present in amended claim 1 and, therefore, its allowance is favored over the art of record. More specifically, the Examiner relies on Rodgers as teaching an apparatus that has both detecting means and marking means located on the same apparatus, facilitating use by laborers of minimal training. Further, the Examiner states that it would have been obvious at the time the invention was made to supply the detection and marking means taught respectively by the Peterman reference and the '022 patent in an apparatus similar to that of Rodgers. Applicants respectfully disagree at least for those reasons set forth hereinafter.

Prior to discussing the specific limitations of the claims under consideration, it is worthwhile, as an undertaking, to understand the Rodgers patent standing on its own, and then in light of the remaining art of record. It is noted that this rejection appears to position Rodgers as a primary reference by suggesting modification of Rodgers to include the detection means of Peterman and the marking means of the '022 patent.

The Rodgers reference is concerned with plotting accurate marks on the surface of the ground based on a map such as a construction plan. What the reference is teaching is essentially analogous to a printer or plotter which uses the surface of the ground as its sheet of paper. The duty of the operator is merely to move the plotting apparatus across the plotting area in some patterned manner so that the apparatus is given the opportunity to print upon the entirety of the surface. A patterned movement appears to be the only skill that is required on behalf of the operator. The plotter apparatus itself includes a laser transceiver for transmitting a laser beam which is reflected from reflectors arranged about a periphery of the plotting area and, thereafter, received. Thus, the plotting operation, as is exactly the case for

printing on a sheet of paper, is completely responsive to the location of the print head relative to the bounding edges of the printing area. In support of this position, at column 4, line 16, Rodgers likens his invention to an inkjet printer. This "locator" is not configured for locating an inground object such as a buried utility or boring tool, but rather for continually locating itself relative to the region boundaries (see col. 2, lns. 53-56). Beyond the patterned movement, the operator exercises no control in terms of when or where the apparatus makes a mark. Insofar as operator skill, any operator capable of mowing a lawn could, at least arguably, operate the apparatus. At column 4, line 20, Rodgers alludes directly to this assertion. What the patent fairly teaches, as a whole, is a plotting arrangement for marking the surface of the ground responsive to a map. The locating arrangement of Rodgers is merely a mechanism for tracking the position of its print applicator, as is done in some form by any printing arrangement.

As mentioned above, the structure of this rejection appears to place Rodgers in the position of a primary reference rather than the '022 patent, as broadly teaching the combination of a "detector" and marking arrangement. Viewed in this light, the references must teach at least two sweeping modifications of Rodgers in order to arrive at the limitations which are encompassed by the claims under consideration. First, the position sensitive detector of Rodgers must be modified to form a portable locator for use in underground locating. Second, the marking arrangement of Rodgers must be modified from an arrangement which deliberately avoids control by an operator into an arrangement that is configured for complete control by the operator, not only in when a mark is made, but where the mark is made. Each of these modifications will be addressed, in turn, below.

First considering the modification of Rodgers to include an underground locator, it is submitted that Rodgers fails to disclose or suggest detection that is operable underground. It is Applicant's position that Rodgers would have no practical reason to locate hardware underground, let alone any other component of the system, in a way which defines the peripheral boundaries of the plotting region when the entire purpose of the system is to plot a map on the surface of the ground. The position detection system of Rodgers is completely unresponsive to anything that is underground, but rather is only sensitive to distance from the peripheral boundaries of the plotting region-- like any other form of printer. Accordingly, modification of the Rodgers plotter in the proposed manner, and just with respect to its detection arrangement, would result in a completely different form of device that is directed to solving a completely different problem. Applicants are unable to find any of the myriad teachings in Rodgers, or the remaining art of record, which would reasonably be required to render the level of motivation needed to make such an extensive modification.

The Examiner appears to suggest that the requisite motivation is provided by the benefit of laborers, using the Rodgers device, having minimal training. Applicants respectfully disagree. The advantages provided by the present invention, as described above, are entirely unrelated to any attempt at minimizing the training level of an operator. Moreover, Applicants submit that this rationale bears little, if any, relationship to the teachings of either Peterman or the '022 patent in support of any reasonable combination therewith. In this regard, it is impermissible within the framework of 35 U.S.C. § 103 to pick and choose from a reference only so much of it as will support a conclusion of obviousness to the exclusion of other parts necessary to a full appreciation of what the reference fairly suggests to one skilled in the art. It is submitted that Applicants would have no motivation to look to Rodgers, with respect to any locating function, at

least for the reason that Rodgers essentially teaches a printing device that is operable only above and on the surface of the ground.

Now turning to the aforementioned modification of Rodgers in order to include a marking arrangement that is configured for control by an operator, it is important to appreciate what Rodgers is teaching. In particular, Rodgers teaches that it is advantageous to provide a marking arrangement which is not controlled by an operator. In particular, the Rodgers marking arrangement is automatically controlled directly responsive to its position in the plotting region. The spirit of the Rodgers patent resides in producing an accurate plot responsive to a map by limiting any influence on this process caused by an error-prone operator. Accordingly, it is only necessary for the operator to progressively scan the print head across the printing region, much like mowing a lawn. As an example, at col. 4, lns. 12-16, the process is described in terms of a CPU sending output signals to cause an applicator to apply the paint. The description is devoid of any involvement of the operator. Seen in this light, Rodgers teaches specifically against using an operator controlled marking arrangement such as is taught by the '022 patent. That is, the suggested modification, which converts the reference from an arrangement which deliberately avoids control by an operator into an arrangement that is configured for complete control by the operator, not only in when a mark is made, but where the mark is made, is submitted to be fatally flawed by resulting in a device which Rodgers teaches directly against. Accordingly, Applicants would have no motivation to make the proposed combination in view of what Rodgers fairly teaches as a whole.

Having generally considered the Rodgers patent within the framework of the remaining art of record, the specific limitations of the claims under rejection will now be taken up. Initially considering claims 10-14, all of which depend indirectly from amended claim 1, it is submitted that Rodgers contributes nothing to the § 103 rejection of amended claim 1, discussed above, under the combination of the '022 patent and Peterman. In particular, Rodgers is considered to teach directly against an operator responsive ground marking arrangement, discloses only an above ground laser plotting arrangement and fails to suggest anything with respect to modification of its periphery sensitive plotting detector into a portable locator for in-ground detection. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 1. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 1, further distinguish the claimed invention from the art of record.

As an example, Claim 10 recites the steps of interfacing a solenoid with an electronics package and interfacing the electronics package with a push button switch such that the electronics package electrically actuates the solenoid responsive to the operator engaging the push button switch.

Claim 15, as amended, is an independent claim which reflects certain detailed limitations discussed above with respect to the patentability of claims 1-14 over the art of record. It is submitted that claim 15 is patentable at least for the reasons set forth above over the art of record in any reasonable combination.

Dependent Claims 16-19 are each either directly or indirectly dependent from and therefore include the limitations of claim 15. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 15. Further, each of these dependent claims places

additional limitations on their parent and intermediate claims which, when considered in light of Claim 15, further distinguish the claimed invention from the art of record.

For example, claim 17, additionally requires that the electronic monitoring step includes the step of monitoring operator interactions for the predetermined operator actuation to control the marking arrangement and for the other operator actuations for controlling the locating arrangement. Claim 18 further recites monitoring a pushbutton switch for all of these operator interactions. Further, claim 19 recites that the electronic monitoring step includes the step of monitoring the switch for the predetermined operator actuation as a sequence of closing the switch twice in timed succession and then holding the switch closed. As described by the present application, this combination of steps is considered to be highly advantageous by distinguishing between the locating functions and marking functions using a single input control. In attempting to meet these additional limitations, the Examiner refers to an LCD display and keyboard described at col. 4, lns. 33-49 of Rodgers. The Examiner appears to equate monitoring actuations as equivalent to monitoring the apparatus. Applicants respectfully disagree. It is noted that this description is specifically limited to display of process status. The claimed limitations are not merely directed to monitoring or display of process status, but rather to selective operator-initiated control of different portions of the apparatus. Applicants are unable to find any teaching or suggestion in Rodgers which would lead one to believe that an operator could provide a command or control input to the apparatus which would result in altering the plotting result that is obtained. Again, the spirit of Rodgers is to eliminate and avoid operator dependent control of its ground marking process so as to avoid plotting errors. In this regard, Applicants submit that Rodgers would favor the complete elimination of an operator for purposes of traversing the apparatus across the plotting region if a practical means for doing so became available. In sum, Applicants find no teachings in the art of record with respect to a control implementation, as is embraced by the specific limitations of claims 16-19.

Amended claim 20 is an independent claim which recites a method for fabricating a portable device. The method includes the steps of configuring a housing arrangement to define a first operating position and to define a second operating position. A locating arrangement is supported at the first operating position and a ground marking arrangement is supported at the second operating position such that the locating arrangement and the ground marking arrangement in the first and second operating positions, respectively, cooperate for use by an operator in identifying a location on the surface of the ground relative to at least one of a buried line and a boring tool. The operator then may use the marking arrangement to mark the location. Claim 20 has been amended in a way which is thought to more particularly point out this distinction. Applicants submit, with regard to this combination of steps and has argued above, that the art of record is devoid of any reasonable teaching to provide a portable device having a housing with an in-ground locating arrangement configured for locating at least one of a buried line and a boring tool, and a ground marking arrangement co-located in the housing for marking the surface of the ground, each of which arrangements is operator controlled, as is further described immediately hereinafter.

Rodgers diverges in at least two important ways. First, by teaching a device which is limited to above ground use and which has no practical use for below ground hardware or regional boundaries, as described above. Second, the location tracking portion of the Rodgers apparatus is interfaced directly to its marking device, thereby teaching directly

against permitting operator controlled ground marking. The tracking portion and marking portions of Rodgers are not "used" by the operator, as is required by claim 20, but rather are connected directly to one another. Again, Applicants are unable to find any described operator control or actuations which permit the operator to change the outcome of the plotting operation. The spirit of Rodgers is to avoid operator control in order to reduce possibilities for operator error to negatively influence the outcome of the process. In this light, Rodgers teaches directly away from the combined limitations of claim 20. Accordingly, for all of the foregoing reasons, allowance of amended claim 20 is respectfully requested.

Dependent Claims 21-30 are each either directly or indirectly dependent from and therefore include the limitations of Claim 20. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 20. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 20, further distinguish the claimed invention from the art of record.

For example, claim 21 recites configuring the housing arrangement using the steps of forming a first housing portion and a second housing portion, positioning the locating arrangement within the first housing portion, and positioning the ground marking arrangement within the second housing portion. Claim 22 provides additional limitations by adding the step of hinging the first housing portion to the second housing portion for movement of the first and second housing portions between an operational configuration for use by said operator and a compact configuration for at least one of transport and storage. In attempting to meet this combination, the Examiner references a handle which is hinged to the body of the Rodgers apparatus. Applicants respectfully disagree. The configuration of Rodgers fails to meet the claimed combination at least for the reason that the hinge is not interposed between its ground marking arrangement and laser transceiver arrangement.

As another example, claim 23 recites the step of arranging an electronics package for monitoring operator actuations of the portable device (i) to detect a predetermined operator actuation for use in controlling the ground marking arrangement, (ii) to detect other operator actuations for use in controlling the locating arrangement and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the ground marking arrangement. Claim 24 adds the step of configuring the electronics package to monitor a switch for the predetermined operator actuation and the other operator actuations. Additional limitations are added by claim 25 wherein the step of arranging the electronics package uses the electronics package to monitor the switch for the predetermined operator actuation as a sequence of closing the switch twice in timed succession and then holding the switch closed. As discussed above with respect to claims 18 and 19, the claimed limitations are not merely directed to monitoring process parameters, as in Rodgers, but rather to selective operator-initiated control of different portions of the apparatus. The spirit of Rodgers is to eliminate operator dependent control. Applicants find no teachings in the art of record with respect to such a control implementation.

Claim 31 is an independent claim directed to limitations which include arranging an electronics package for monitoring operator actuations of the portable device (i) to detect a predetermined operator actuation for use in controlling the marking arrangement, (ii) to detect other operator actuations for use in controlling the locating

arrangement, and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the marking arrangement. As discussed above, with respect to this combination of features, Rodgers is relied on as teaching an LCD process monitor screen. Applicants disagree and respectfully submit that claim 31 is allowable at least for the reason that the art of record, in any reasonable combination, fails to teach, disclose or suggest, operator initiated control of the locating and marking functions, as contemplated by the present invention.

Dependent Claims 32 and 33 are each either directly or indirectly dependent from and therefore include the limitations of claim 31. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 31. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 31, further distinguish the claimed invention from the art of record.

For example, Claim 32, as amended, adds the step of monitoring a switch for the predetermined operator actuation and for other actuations while amended claim 33 recites the predetermined actuation as a sequence of closing the switch twice in timed succession and then holding the switch closed.

Claim 34, as amended, is an independent claim which recites a method for manufacturing a portable device. A locating arrangement is supported in one operational orientation in a housing arrangement and is configured for actuation by an operator to locate at least one of a buried line and a boring tool. A ground marking arrangement is supported in another operational orientation for actuation by the operator to mark the ground. Claim 34 has been amended in a way which is thought to more particularly point out this distinction. Applicants submit, with regard to this combination of steps and as argued above, that the art of record is devoid of any reasonable teaching to provide a portable device having a housing with an in-ground locating arrangement configured for locating at least one of a buried line and a boring tool and a ground marking arrangement co-located in the housing for marking the surface of the ground, each of which arrangements is operator controlled. For example, Rodgers teaches a device that is limited to above ground use and has no practical use within solid ground. Further, the location tracking portion is interfaced directly to a marking device, thereby teaching directly against permitting operator controlled ground marking. The spirit of Rodgers is to avoid operator control in order to reduce possibilities for operator error to negatively influence the outcome of the process. In this light, Rodgers teaches directly away from the combined limitations of claim 34. Accordingly, for all of the foregoing reasons, allowance of amended claim 34 is respectfully requested.

Dependent claims 35-37 are each either directly or indirectly dependent from and therefore include the limitations of claim 34, as amended. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to amended claim 34. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of claim 34, further distinguish the claimed invention from the art of record.

For example, claim 35 recites the step of arranging an electronics package in the housing to monitor operator actuations of the portable device by (i) detecting a predetermined operator actuation for use in controlling the marking arrangement, (ii) detecting other operator actuations for use in controlling the locating arrangement and (iii), upon

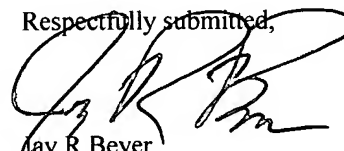
detecting the predetermined operator actuation, initiate marking by the marking arrangement. Claim 36 further requires that the step of arranging the electronics package includes the step of configuring the electronics package to monitor a switch for the predetermined operator actuation and the other operator actuations. Still further, claim 37 recites that the step of configuring the electronics package customizes the electronics package to monitor the switch for the predetermined operator actuation as a sequence including closing the switch twice in timed succession and then holding the switch closed. Applicants submit that the art of record fails to disclose, teach or reasonably suggest these features in any reasonable combination at least for the reasons that Rodgers fail to provide for actual control interaction with an operator for controlling its plotting apparatus. Moreover, these features are advantageous in monitoring a single switch for control actuations that are to be directed to different functional portions of the apparatus. Accordingly, allowance of dependent claims 35-37 is respectfully requested.

New claim 38 has been added for consideration by the Examiner which is believed to be directed to patentable subject matter.

For all of the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, Applicants respectfully request allowance of the claims under immediate consideration, and passage to issue of the application are solicited.

Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the Examiner is requested to contact Mike Pritzkau at 303-410-9254.

Respectfully submitted,



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